Claims

1. A sensor comprising a plurality of layers, comprising:

a first mask layer;

a second mask layer;

a third mask layer disposed between said first and second mask layers and defining an aperture; and

a first conductive layer disposed between the first mask layer and the third mask layer;

a second conductive layer disposed between the second mask layer and the third mask layer; and

a separator layer extending across the aperture in the third mask layer, said separator layer being configured to separate the first and second conductive layers when no pressure is applied to the sensor and to allow electrical contact between said first and second conductive layers during a mechanical interaction with said sensor,

wherein each mask layer is formed from an electrically insulating material and has at least one side attached to another of said mask layers by adhesive.

2. A sensor according to claim 1, in which said third mask layer has smaller border dimensions than said first and second mask layers, whereby a peripheral portion of said first mask layer is directly attached to said second mask layer.

3. A sensor according to claim 1 or claim 2, in which said sensor further comprises a conductive track for applying electrical potentials to said first conductive layer, wherein a portion of said conductive track is disposed directly on said first mask layer and a portion is positioned directly on the conductive layer.

4. A sensor according to claim 3, wherein said first and second mask layers define a tab and said conductive track runs from said tab to said first conductive layer.

5. A sensor according to any of claims 1 to 4, wherein said conductive layers comprise conductive textile layers.

6. A sensor according to claim 5, wherein said conductive textile layers are formed from electrically conductive fibres.

7. A sensor according to any of claims 1 to 6, wherein said first and second mask layers are continuous layers whereby said sensor is protected against ingress of moisture or other contaminants.

8. A sensor according to any of claims 1 to 7, wherein said mask layers are formed from a plastics material.

9. A sensor according to any of claims 1 to 7, wherein said mask layers are formed from a polyurethane material.

10. A sensor according to any of claims **1** to **9**, wherein said adhesive is a thermoplastic adhesive.

11. A sensor according to any of claims **1** to **10**, wherein said separator layer is formed from a mesh material.

12. A sensor according to any of claims **1** to **11**, wherein the sensor is configured to generate signals in response to mechanical interactions, the signals representing X-axis and Y-axis co-ordinate data of mechanical interactions within the sensing area of the sensor.

13. A method of assembling a plurality of layers to form a sensor comprising, the steps of:

obtaining a first mask layer and second mask layer;

obtaining a third mask layer defining an aperture and formed from an electrically insulating material;

locating a first conductive layer between the first mask layer and the third mask layer;

locating a second conductive layer between the third mask layer and the second mask layer such that the third mask layer is disposed between said first and second mask layers, and

attaching at least one side of each mask layer to another of said mask layers by adhesive,

wherein a separator layer is located between said first and second

conductive layers such that it extends across the aperture in the third mask layer, and wherein said separator layer is configured to separate the first and second conductive layers when no pressure is applied to the sensor and to allow electrical contact between said first and second conductive layers during a mechanical interaction with said sensor.